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Friday's Feature
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Pest control using horticultural oils

February is an ideal time to apply horticultural oil to your ornamental trees, shrubs and fruit trees to control scale and several other overwintering insects. However, to prevent harm to your plant, it is important to understand how horticultural oils work and their limitations.

Horticultural oils have been used for pest control for over a century. In the early years, they were used only on dormant plants because of the impurities in the oil product. However, improvements in refining techniques have now made oils safe to use during both the dormant season and the growing season.

What is horticultural oil? Essentially all commercially available horticultural oils are refined petroleum products. Homemade recipes that include vegetable oils also can be used. The type of vegetable oil however can greatly affect its effectiveness. Cottonseed oil is generally the most insecticidal of all the vegetable oils.

There are two types of oils used for pest control—dormant oils and summer oils. Dormant oils are applied when the plant is dormant during the winter season. These oils have a high viscosity, or heaviness. This is important because during the dormant season, insects and mites have a lower respiration rate. The heavier oil is slower to dry and therefore covers the pest for a longer time before evaporating. This increases its effectiveness.

Summer oils are lighter with lower viscosity. They are applied during the growing season and are known by many names including ultra-fine or superior oils.

How do horticultural oils work? They are most effective against soft-bodied insects like aphids, spider mites, scales, mealybugs and lacebugs. Oils work by suffocating the insect. They actually coat the insect and block their breathing holes or spiracles. This makes oils effective against insect eggs also.

Horticultural oils have several advantages over other insecticides. They are relatively safe to mammals (including humans), birds and reptiles. They are relatively inexpensive, easy to use, require no special spray equipment, are effective against a wide range of pests and insects rarely develop resistance to oils.

However, in spite of their many benefits, horticultural oils do have some limitations. First, because oils do not have a long lasting effect, the target pest must be present in order to be controlled and coverage must be thorough.

Horticultural oil is not selective. Therefore, oils will kill any susceptible beneficial insect if they become coated with the product. However, fast moving insects (like many beneficials) survive because they move away from the area as it is being sprayed. When they return there is no residual effect to harm them, since horticultural oil evaporates rapidly.

The main limitation of oils is their small but real potential to cause plant injury in some situations. Damage may appear as yellowing of the leaves, death of tissues, stunting, growth retardation, abnormal growth or defoliation.

Plant injury resulting from oil sprays may occur for several reasons. Oil injury can occur if the plant is a variety that is particularly sensitive to it, if an excessive rate was used, if too many applications were made, if the oil was applied at close intervals or if inappropriate weather conditions existed at the time the spray was applied.

Summer oils typically should be sprayed when temperatures are between 40 to 85°F on a day with moderate humidity and when the plant is not under moisture stress. Dormant oils are typically applied when temperatures will remain above 40°F for 24 hours.

As with all pesticides, read and follow all label directions.

Theresa Friday is the Residential Horticulture Extension Agent for Santa Rosa County. The use of trade names, if used in this article, is solely for the purpose of providing specific information. It is not a guarantee, warranty, or endorsement of the product name(s) and does not signify that they are approved to the exclusion of others.